From a Young Teen‟s Perspective: Income and the Happiness of Canadian 12 to 15 Year-Olds

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Abstract
Much recent work by economists has studied the association between income and happiness for adults; children and youth have received considerably less attention in the economics 'happiness' literature. The Statistics Canada National Longitudinal Survey of Children and Youth (NLSCY) asks 12 to 15 year old children to assess their own happiness, while mothers report income and most basic demographic information. We use these data to conduct a multivariate analysis of the association between income and happiness from a young teen's perspective. We find positive associations between family income and young teen happiness, especially when we use a long-run average measure of family income. However, quantitatively, income is not nearly as important as family structure, teen's age and health status, or parental well-being.

JEL codes: I3, J13
Keywords: happiness, well-being, children, youth, income, relative income

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INTRODUCTION

Early economic models of the family (e.g., Becker, 1974) used a 'household utility function' that essentially ignored issues of distribution *within* families. A large body of more recent research has rejected this 'unitary' approach, and emphasized, instead, that inequalities can exist within families (see Burton et al., 2007 for a recent survey). A variety of explanations for unequal sharing of resources within families exist in this literature. For example, sources of income (e.g., mother's versus father's) have been shown to affect allocation of spending toward children (e.g., Kooreman, 2000; Lundberg, Pollak and Wales, 1997). Social norms with respect to within-family roles (e.g., for husbands versus wives) are also argued to influence within-family allocations (e.g., in Lundberg and Pollak's 'separate spheres' bargaining model, 1993). One's role as a 'parent' versus a 'child' is likely to be very important in this context. Parents typically control resources since few children have income of their own; parents may choose to allocate more or less than an 'equal share' of income to their children. For instance, rich parents may limit current child consumption to less than an 'equal share of family income' would otherwise suggest to avoid 'spoiling' children. Poor parents, to the extent possible, may try to shelter their children from financial hardship. Indeed, there is qualitative evidence that poor mothers, for example, buy winter coats or new shoes for their children and go without these things themselves (Middleton, et al., 1997).

If we take the lesson from the literature on inequality within families that not all individuals within the family will benefit equally from available 'family income,' then an interesting question is: are associations between family income and self-assessed well-being the same for all family members? Much recent work by economists has studied the association between income and happiness for adults (e.g., Clark, 2009; Clark and Oswald, 1996;

D'Ambrosio and Frick, 2004 and 2007; di Tella et al., 2006; Easterlin, 2001; Ferrer-i-Carbonell, 2005; Luttmer, 2005). Children and youth have received considerably less attention in the economics 'happiness' literature.[1] It seems plausible, for example, that the income/happiness gradient found in the literature for adults would be less evident for children.[2] This may be in part because parents shelter children, but it is likely also the case that children/youth have limited information about family finances and income may be less a personal 'measure of success' for children/youth than for parents; on the other hand, children may be particularly vulnerable to marketing and peer pressure. Our core research question in this paper is whether associations between family income and the self-assessed happiness of children/youth differ from those reported in the extensive literature on income as a determinant of happiness for adults?

Using microdata from the Statistics Canada National Longitudinal Survey of Children and Youth (NLSCY), this paper conducts a multivariate analysis of the association between family income and self-reported happiness for Canadian 12- to 15- year-olds. In the first section of the paper, we use income histories spanning the past 7 years, to ask several questions: 1) Is there a relationship between current family income and current young teen self-assessed happiness?; 2) Does a 'long-term average' measure of family income have a larger association with current child happiness than a measure of the current income level?; 3) Given level, does having a history of income variability mean lower current levels of young teen happiness?; 4) Are income losses more important for well-being that simply income variations?; 5) Given family income, does *relative* socioeconomic status matters for young teen subjective well-being?

Since a higher family income may come at the expense of longer hours of parental paid work and this may have off-setting negative implications for young teen well-being, we control

[1] As discussed in the literature review to follow, there is a large literature that studies associations between family income and, other aspects of child well-being, including, for example, child health or educational outcomes.
[2] Burton and Phipps (2010a) provide informal evidence that income may matter more for adults than for children.

for usual weekly parental paid work hours during the past year. Also, income may be low in a given year because a parent loses his or her job, and unemployment of a parent may have negative implications for young teen well-being beyond simply the income loss. Thus, we also control for parental experience of unemployment during the past year.

Finally, a unique feature of the NLSCY data that we are able to exploit here is that both the parent answering the survey and the child provide self assessments of their own well-being (unfortunately, not using the same survey question). Thus, we are also able to include measures of parental well-being as a potential indirect pathway from family income to child happiness.

In the second section of the paper, we exploit the longitudinal structure of the NLSCY to estimate fixed effects models of young teen happiness in an effort to avoid potential problems of unobserved heterogeneity. Note, however, that we are somewhat limited by the data in our fixed effects analyses. For any one child, we have at most two years in which he/she self reports happiness while his/her parent reports on the other explanatory variables necessary for the analysis.

Throughout, we compare findings for boys and girls.

II. RELEVANT LITERATURE

Income and Adult Happiness

Frey and Stutzer (2002) identify three aspects of the relationship between happiness and income that have been studied in the literature: 1) whether people living in rich countries are happier than those living in poor countries; 2) whether individuals with higher incomes are happier than individuals with lower incomes at a point in time, within the same country; 3) whether increases in income across time are associated with increases in happiness.

Evidence on the first point appears to be rather clear: happiness levels are, on average, higher in countries with higher reported incomes, though income matters more at lower levels of economic development (e.g., below the median for OECD countries – Helliwell and Putnam, 2004). It is also the case that many scholars find, at any point in time, that adults with higher incomes are happier than those with lower incomes, within the same country. However, a paradox that has prompted considerable recent research attention is that though average incomes have increased over time in many countries, average levels of reported happiness have not (Easterlin, 2001).

One explanation for the 'Easterlin paradox' focuses on income changes (assuming higher income individuals in a cross-section are more likely to have been the most likely to have had increases in income). For example, it may be that aspirations/expectations quickly adapt to any new income level meaning we are on a 'hedonic tread-mill' (e.g., Di Tella et al., 2006; Easterlin, 2001). Another explanation is that what people really care about is their place in a hierarchy (i.e., their relative income) more than their absolute level of income (Clark and Oswald, 1996; D'Ambrosio and Frick, 2004 and 2007; Dusenberry, 1949; Ferrer-i-Carbonell, 2004; Frank, 1999; Luttmer, 2005).

A priori, it is not obvious whether we would expect to find stronger or weaker relative income associations for young teens than for adults. On the one hand, young teens may be less aware that they have a higher or lower income than others in their reference group, particularly if parents manage to provide opportunities/experiences for their children (e.g., nice clothes or participation in sports or music) by sacrificing some parental consumption. On the other hand, teens may be very sensitive both to marketing and to peer pressure, so relative income may have an even stronger relationship with happiness for this age group.

There has been less attention in the literature studying links between income and happiness to the question of whether 'permanent income' (i.e., multi-period average income) has larger associations with happiness than annual income, an issue that has been the focus of many studies of the relationship between income and health (see, for example, Benzeval and Judge, 2001 or Phipps, 2003 for reviews). To the extent that permanent income is a better measure of family socioeconomic status (e.g., less subject to random shocks or measurement error) we might expect larger associations with young teen happiness.

Existing Literature on Children and Youth

There has been growing recent interest in the study of indicators of child well-being (e.g., Ben-Arieh and Goerge, 2006; Land, et al., 2007). However, the economics literature on the subjective well-being of children and youth is small relative to the body of work on adults. [3] The psychological literature is also fairly small (see Huebner, 2004 or Huebner, et al., 2004 for recent reviews), though research has demonstrated that child/youth self-assessments of their own quality of life are meaningful from about age eight (Huebner 2004). Self-assessed quality of life scales for children/youth are significantly correlated with but still distinct from other measures of mental health or well-being (Huebner, Funk and Gilman 2000; Hueber 2004; Land, et al., 2007). Self-reported measures of child well-being are believed to have validity because: 1) There is stability across time in how children/youth answer questions about their own well-being (Huebner, Funk and Gilman 2000); 2) Parent and child assessments of the child's well-being correlate well (Gilman and Huebner 1997); 3) Child/youth reports of own quality of life are predictive of important future outcomes (Huebner, Funk and Gilman 2000).

[3] Dockery (2005) studies the self-assessed happiness of Australian youth during their late teen years (older than our sample), with a particular emphasis on the role of unemployment experienced during their initial phase of labour market participation.

Psychological research has not focused on the link between young teen well-being and income, though Ash and Huebner (2001) report finding a small positive association between youth subjective well-being and socioeconomic status (measured rather simply as 'being eligible for a school lunch programme'). There is, however, a very large literature studying associations between family income and other aspects of 'child well-being,' though 'child well-being' often refers to outcomes such as health or educational success rather than child-assessed 'happiness' or 'life satisfaction' (see, for example, Case et al., 2002; Currie, 2009; Currie and Stabile, 2003; Dooley and Stewart, 2004; Mayer, 2002, Phipps and Lethbridge, 2006; Ross and Roberts, 1999).

Our own previous research on young teen happiness (Burton and Phipps, 2008) was conducted using the same data set as we use here (i.e., the Statistics Canada National Longitudinal Survey of Children and Youth). Since the goal of this earlier study was to provide a first cross-sectional examination of the correlates of self-reported well-being for young Canadian teens, we did not exploit any of the longitudinal features of the data. Rather we simply estimated associations between teen self reports of happiness in 2004 and a wide range of potential correlates from the same year. Separate probit models of the probability of being at the bottom of the happiness distribution and at the top of the happiness distribution were estimated. In each case, three specifications were run using: a) only information provided by the parent; b) adding information provided by the teen; c) adding a measure of teen 'pessimism' to help account for unobserved heterogeneity in terms of teen personality. Our sample was restricted to children from two-parent families, and given limited sample size, no gender break-downs were provided. The strongest correlate of teen happiness identified was with the teen's assessment of how well his or her parents 'get along.' Of particular relevance to this study, we also found that young teens from families with higher incomes were less likely to report themselves 'unhappy,'

though current income had no association with the probability of being 'very happy.' On the other hand, neighbourhood income (median census income in the geographic area defined by first three digits of postal code) was found to correlate positively with the probability of being 'very happy' but not with the probability of being 'unhappy.'

III. DATA

The data set employed for this analysis is the National Longitudinal Survey of Children and Youth (NLSCY), a representative longitudinal survey of Canadian children and youth drawn from the Labour Force Survey sampling frame. The NLSCY currently spans the period 1994 through 2006, with surveys conducted every two years. For young children, the 'person most knowledgeable' about the child, or 'pmk,' answers most questions (the pmk is the mother for 92.7 percent of the children in our main estimating sample). After the age of 10, both pmk and child answer questions. With parental permission, children are given their own paper questionnaire. This is completed privately (no parental observation is allowed), sealed and returned to the Statistics Canada interviewer.

For pragmatic reasons, we study associations between income and happiness for 12 to 15 year old children. It is not possible to include younger children, since self-assessments of well-being are first available in the NLSCY at age 12. Although youth aged 16 and over also report happiness, many other covariates used in the analysis (e.g., health status) switch from a pmk to a teen report beyond the age of 15, significantly compromising the comparability of information available.

For our 'retrospective cross-sectional' analyses, we need measures of long-term average income and measures of variation in income experienced by the child. For these analyses, we

thus restrict attention to children with income data for four survey cycles (spanning 7 calendar years since surveys are carried out every two years). In the final cycle, the child must be in the 12 to 15 age range and have answered the 'happiness' question in that year. To be clear, we do not have the youth self report of happiness in all four years, but only the family income history. We exclude a small number of children who live, for example in a group home or in foster care. Non-response to any other variable used in the analysis also leads to exclusion.

In order to maximize sample size and to allow separate estimates for boys and girls, for the 'retrospective cross-sectional' work, we pool four 4-cycle panels of young teens (1994-2000; 1996-2002; 1998-2004; 2000-2006), always controlling for cycle in regression analyses. This 'four-cycle' pooled sample consists of 9,124 young teens (4535 boys and 4589 girls).

For our fixed effects analyses, we construct a sample of children who have reported happiness in two cycles (when they were 12 or 13 and again when they were 14 or 15). We also require pmk response in both cycles to all questions used to construct explanatory variables. We are able to pool five 2-cycle panels (i.e., 1996-98; 1998-2000; 2000-2002; 2002-2004; 2004-2006) for a sample of 5788 children (2877 boys and 2911 girls).[4]

All analyses employ longitudinal sampling weights. Since some young teens can appear twice in the 4-cycle pooled 'retrospective cross-sectional' data set and siblings can appear in either the 4-cycle pooled data set or the 2-cycle pooled fixed effects data set, standard errors are adjusted to take account of the associated non-independence of these observations (i.e., clustering at the household level).

The subjective well-being question asked of young teens in the NLSCY is: "In general, I am happy with how things are for me in my life now." Responses can include: strongly

[4] Self-reported happiness is not available in 1994 when the oldest children in the data set were only 10 and 11.

disagree, disagree, agree, and strongly agree.[5] As indicated in Table 1, the vast majority of young teens in our 'four cycle' pooled sample agree or strongly agree that they are 'in general happy with how things are in life now' with the most likely response being that they 'agree' rather than 'strongly agree.' For example, 56.6 percent of youth "agree" that they are generally happy; 34.8 percent "strongly agree;" 7.0 percent "disagree" and only 1.6 percent "strongly disagree." Girls are somewhat less likely than boys to 'strongly agree' that they are generally happy (33.5 percent compared to 36.1 percent) and somewhat more likely to 'disagree' (7.5 percent compared to 6.4 percent). Unconditionally, the boy/girl happiness distributions are statistically different. (In an ordered probit model in which 'girl' is the only explanatory variable it is strongly statistically significant.)

IV. MULTIVARIATE SPECIFICATION – CROSS-SECTIONS WITH RETROSPECTIVE FAMILY INCOME HISTORIES

This section of the paper studies connections between family income and the self-reported happiness of young teens. Are they happier when their families have higher incomes? Does 'permanent' (long-run average) income matter more or less than current income? Given any level of 'permanent income,' are young teens whose family income history has been more variable less happy? Finally, does a reduction in income have larger associations with young teen well-being than an increase? To address these questions, we estimate ordered probit models in which the young teen's self-assessed happiness is the dependent variable and family income is the key explanatory variable.[6]

[5] According to Statistics Canada, 87.5 percent of youth responded to this question (Statistics Canada, 2007).
[6] Although the ordered probit model seems most appropriate for these data, we have also run all models using OLS specifications. And, we have estimated 2 sets of dichotomous probit models. The first distinguishes 'happy' from 'sad' youth (i.e., those who 'agree' or 'strongly agree' that they are happy versus those who 'disagree' or 'strongly

Alternative Specifications for Family Income

The measure of family income available in the NLSCY is pre-tax annual income from all sources, including government transfers.[7] It is particularly important that the mother rather than the young teen reports family income, given that most 12 to 15 year olds will lack detailed knowledge of family income. Since the standard of living associated with any level of income will vary with family size, in this section of the paper we use 'equivalent' family income, where 'equivalent income' is actual dollar income divided by an appropriate equivalence scale.[8] Following the happiness literature for adults, and to allow income to matter more at lower income levels, we always use the log rather than the level of family equivalent income.

We report the association between income and youth happiness for four specifications of income: 1) current income (i.e., from the same year as young teen happiness[9]); long-run average equivalent income (i.e., using 4 cycles of data, spanning the past 7 years, for example, 2000, 2002, 2004, 2006 for a self report of happiness in 2006); 3) long-run average income and the coefficient of variation of income over the four cycles; 4) long-run average income plus a dummy variable indicating that there was ever a reduction of at least 25 percent in real income. Means for these variables are reported in Table 2. On average, current family income for our sample of 12 to 15 year olds, is $98,390 (2006 Canadian dollars). Four-cycle average family income, spanning the years during which the child was 7 to 10 until he or she was 12 to 15, is lower, at $86,059. The average coefficient of variation calculated across the 4 cycles of data for

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disagree'). The second probit model distinguishes those who 'strongly agree' that they are generally happy from everyone else. Results are all consistent with the ordered probit models reported here.

[7] Pmk's are asked "What is your best estimate of your total household income from all sources in the past 12 months, that is the total income from all household members, before taxes and deductions?"

[8] We use the Luxembourg Income Study, or LIS, equivalence scale equal to the square root of family size. Thus, for a family of four with dollar income of $50,000, 'equivalent' income is $25,000.

[9] However, since we've pooled several years of data, current income is always reported in real 2006 dollars.

our sample children is 0.1060. Finally, about one third of 12 to 15 year olds in our sample have experienced at least one reduction in real family income between cycles of 25% or more.[10]

Control Variables for Cross-Sectional Multivariate Analyses

In addition to the family income variables, we include a fairly basic set of covariates in all estimated models (all means/frequencies are reported in Table 2). Covariates are constructed using mother-provided information. Since the young teens assess their own happiness, methodologically, this is an important difference between our work and much of the literature on adult happiness where the same person reports left-hand side and right-hand side variables and helps us avoid potential 'spurious correlation' between the youth self reports of happiness and explanatory variables of interest (e.g., an individual with a cheery disposition reports himself/herself to be very happy and to have very good health). It of course remains true that there may be some other unobservable factor that both leads to a higher family income and a happier young teen. For example, a parent's pleasant personality might both help make the child happy and help the parent get ahead at work.

From the perspective of a young teen, having a higher family income increases material resources, but potentially at the expense of hours of parental time available. Thus, a first key control variable in all models is pmk weekly hours of paid work: we use a set of dummy variables for 'not in paid work,' 'part-time,' 'full-time' and 'high weekly paid hours' (more than 40 paid hours per week) to reflect the often non-marginal nature of paid work options. As indicated in Table 2, about 12.9 percent of pmk's report zero weekly paid hours, 22.6 report part-time hours (1 to 29 hours per week), 29.4 percent report regular full-time hours (30 to 40) while 35.0 percent report 'high' paid hours (more than 40 per week).

[10] The 25% reduction is in real dollar (non-equivalized) income. Otherwise, an increase in family size could generate a reduction in equivalent income.

Since parental unemployment is plausibly upsetting for young teens as well as parents, a second parental labour market indicator included in our regressions is a dummy indicating that either pmk or spouse (when present) experienced any unemployment during the past year.[11] About 10 percent of children had at least one parent with at least one week of unemployment during the past twelve months.

In addition to the income and labour market variables, we control for a set of young teen characteristics reflective of models estimated in the adult happiness literature. Again, this information is reported by the pmk (usually the mother). Young teen characteristics include: age at the time of the survey (with similar number of teens in each of our four age categories (12, 13, 14 and 15); gender (49.0 percent are female); has a chronic condition (29.6 percent).[12]

A second set of covariates describe the pmk or general family context, again as reported by the pmk. A particularly important aspect of family life from the child's perspective is family structure. Using 'two biological parents' as the base (84 percent of children), we include controls for two parent step family (8.4 percent) and lone parent (7.6 percent). We also control number of siblings (on average 1.5), pmk's education level (a dummy variable equal to one if she/he has high school education or less – 51.5 percent); family's region of residence (6.7 percent in Atlantic Canada; 24.9 percent in Quebec, 39.6 percent in Ontario and 29.8 percent in the West) and an indicator that the family resides in a rural area (13.6 percent). [13]

[11] That is, if either parent reported doing less than 52 weeks of paid work during the past 12 months for reasons: a) temporary layoff due to seasonal conditions; b) temporary layoff, non-seasonal; or, c) permanent layoff.

[12] The chronic condition flag is derived from mother's responses to a series of questions about health conditions diagnosed by a health professional and having lasted or being expected to last at least 6 months. These include both very serious chronic conditions (e.g., epilepsy, cerebral palsy) and relatively minor conditions (eczema, mild asthma).

[13] In earlier work (Burton and Phipps, 2008), we also included a set of child-reported information (e.g., about friends, teachers, and parents). These variables had strong correlations with child self-reported happiness. We do not include them here only because they are certainly subject to the criticism of spurious correlation with the dependent variable.

Parental Well-Being as a Predictor of Child Well-Being?

Since both pmk and child provide self-assessments of their own well-being (though they are not, unfortunately, asked the same questions), we are also able to explore, within families, associations between pmk reports of her own well-being and child reports of his or her well-being. This is relatively rare in the literature (though see Guven, et al., 2009 or Winkelman, 2005). Notice that even if, as hypothesized above, parents attempt to shelter their children from financial hardships so that children's consumption varies less than family income, income could still affect children through its impact on parents. That is, if parents are unhappy, this may convey itself to the children in a variety of ways.

Although we do not have a traditional global happiness or life satisfaction question for pmk's, we are able to use two self-reported measures of pmk well-being. The first is a 'pmk happy' variable constructed from responses to the question: "How often have you felt or behaved this way during the past week: I was happy." Possible responses include: a) Most or all of the time (5-7 days); b) Occasionally, or a moderate amount of time (3-4 days); c) Some or a little of the time (1-2 days); d) Rarely or none of the time (less than 1 day). In our sample, 84 percent of mothers reported themselves to have felt happy 'most or all of the time.'

The 'happy' question is embedded within a series of questions used to assess pmk depression. We also make use of the full depression scale, a slightly shortened version of the U.S. Center for Epidemiology Depression Scale (CES-D) – see Appendix 1 for details. The depression scale ranges from 0 (no depression) to 36; for our sample, the average pmk depression score was 3.5.

V. MULTIVARIATE RESULTS – RETROSPECTIVE CROSS-SECTIONAL

Table 3 reports estimated income coefficients in ordered probit models of young teen self-assessed happiness, for boys and girls together as well as separately. Results for the four family income specifications described above are presented, both for models in which income is the only explanatory variable (except for cycle controls) and for models that include all controls except measures of pmk well-being (added and discussed in the next section).

Table 3 first reports results for current (log of) family equivalent income, which we find to have a positive and statistically significant relationship with self-assessed young-teen happiness for boys and girls together as well as separately, and in models with and without additional controls. Notice, however, that the addition of covariates reduces the estimated size and significance level of the association for the girls. Qualitatively, this finding is consistent with the literature on adult subjective well-being. Quantitatively, it is difficult to make direct comparisons, given the variety of subjective well-being questions and estimation methods used in the adult literature. For example, some authors study overall life satisfaction, some study happiness; surveys vary from scales of 1 to 5 while other vary from 1 to 11(see Appendix Table 1 which reports selected results for adults).[14]

The second set of results reported in Table 3 indicates that (the log of) long-run average income has a larger and more precisely estimated relationship with young teen happiness than current income, especially for the girls. This is perhaps not surprising since long-run average income is likely to be a better measure of a family's 'true' socioeconomic status (e.g., income data from any one year may reflect measurement error or even true year-to-year fluctuations in family income that don't necessarily change family life-style). Finding a larger association

[14] In our own work in progress (Burton and Phipps, 2010b), we are using a survey which asks both adults and children the same life satisfaction question. Preliminary results suggest a larger association between income and life satisfaction for adults than for children. See also Burton and Phipps, 2010a which provides informal evidence of the same pattern.

between child well-being and family 'permanent income' is consistent with results in the literature on socioeconomic determinants of child health, where longer-term measures of income also have the largest and strongest associations (see Benzeval and Judge, 2001 or Phipps, 2003 for reviews).

The third specification reported in Table 3 adds a measure of income variability to long-run average income (i.e., the coefficient of variation calculated over the 4 cycles of income data) in order to investigates the possibility that, given the same long-run average level of family income, a young teen may be less happy if the income stream has been more variable. For example, he or she may feel less economically secure. Estimated coefficients on long-run average income are robust to inclusion of the C.V. However, while C.V. is statistically significant for 'all' children and for the boys when only the two income variables are included in the model, this is no longer the case when additional controls are added to the estimated models. In particular, both changes in family structure and parental unemployment are known to be key correlates of family income level (e.g., Burton and Phipps, 2009, Picot et al., 1999). Thus, it is perhaps not surprising that adding controls for these factors eliminate the independent role for income variability. However, our measure of past 'income variability' is clearly limited by the number of income observations available to us, so further research along these lines would be warranted.

The final specification reported in Table 3 examines the hypothesis that income losses (rather than simply income variability) may have particularly important (negative) consequences for teen subjective well-being. We thus add the dummy variable indicating at least one experience of a 25 percent (or larger) reduction in real income between cycles to long-run average income. Again, the estimated association between long-run average family income and

child happiness is robust to the addition of the income loss variable, and the income loss dummy variable is itself statistically insignificant in models that include covariates except for boys, where it is significant only at the 10 percent level.[15]

Given lack of significance for our measures of income variability and income loss, we do not continue to report these specifications in the remainder of the paper (though models were in all cases estimated and these variables in all cases remained statistically insignificant) but instead focus on results for the long-run average measure of family 'permanent income.'

Other Covariates

Results for other control variables are not particularly sensitive to which measure of family income is used. Thus, for brevity, we report full sets of coefficients only for the 'permanent' income models (see Tables 4a and 4b, first column). For both boys and girls, the most important correlate of happiness identified is family structure. Controlling for long-term average family income in the ordered probit models, children living in either lone-parent families or in step families are less happy than children living in two-biological parent families.[16] The sizes of these associations are particularly large for young teen girls.

In terms of labour market variables, we find no statistically significant association between the current level of pmk paid work hours and the self-assessed level of youth happiness (though this is not the case in the fixed effects estimates). The dummy indicator that either

[15] A number of studies have found that expenditures on children increase when mother's share of income increases (e.g., Lundberg, Pollak and Wales, 1997 or Phipps and Burton, 1998). However, we do not find, controlling paid work hours, that mother's income has a larger association with child happiness than father's income when we enter parents' incomes separately, in a generalized quadratic specification; nor is 'mother's share of income' significantly associated with young teen happiness, controlling level of family income. This conclusion holds whether we use current incomes or long-run average incomes (with their corresponding mother's share); it also hold for both boys and girls.

[16] Note however, that in an analysis focussed solely on children in two-parent families, how well the child assessed his or her parents to be 'getting along' was the strongest correlate of well-being identified (see Burton and Phipps, 2008).

parent experienced any unemployment in the past year is similarly insignificant in all models. These are, admittedly, not ideal measures of parental labour market status. But, when we have a mix of family types included in the sample, it becomes difficult to neatly disentangle, for example, the connection between father's weeks of unemployment and presence of a father in the family or, mothers weekly paid work hours and presence of a mother. A later section of the paper restricts the sample to children living with two parents (biological or step) in order to further pursue potential connections between labour market outcomes of parents and self-reported happiness of children.

In terms of other important correlates, we find that the pmk's report that the youth has a chronic condition (one which has lasted or is expected to last at least six months) is large, negative and statistically significant for girls. We find that reported happiness is consistently lower for older children (despite the fact that we are studying only children who are aged 12 through 15 – see also Casas et al., 2007). We also find, in the boy/girl pooled models, that girls report themselves to be significantly less happy than boys. This contrasts with some earlier findings for adults, in which women reported higher levels of happiness than men (Frey and Stutzer, 2002), though this difference is apparently disappearing in studies with more recent data (Helliwell, 2006).

Girls living in rural areas are happier; number of siblings and mother's education level are never found to have a statistically significant association with young teen happiness. In contrast with findings for Canadian adults (see, for example, Barrington-Leigh and Helliwell, 2008), region of residence is always statistically insignificant.

Parental Well-Being

Columns 2 and 3 of Tables 4a and 4b report full estimated ordered probit models of young teen well-being (using the long-run average measure of family income) when the measures of pmk self-assessed well-being are added. In the pooled boy+girl models (see Table 4a), teen well-being is higher when the pmk was 'mostly or always' happy last week (column 2); teens are less happy when pmk depression score is higher (column 3). Table 4b indicates that this is driven by strong associations between pmk (mostly mothers) well-being and girls happiness; these associations are not statistically significant for the boys. For girls, controlling pmk well-being reduces the size of the long-run average income coefficient, suggesting that one pathway from family income to teen happiness is through the impact on parental subjective well-being. An important caveat for these cross-sectional estimates is that some unobserved 'third factor' (e.g., marital discord), could be what is causing both pmk and daughter to report low levels of happiness.

Marginal Effects for Ordered Probit Models of Teen Happiness

Since ordered probit coefficients do not directly indicate size of association, calculated marginal effects are reported in Tables 5a and 5b. Family structure has the largest association with young teen well-being. Girls in lone parent families, for example, are 12.5 percentage points less likely than an otherwise similar girl in a two-biological parent family to say that they 'strongly agree' they are generally happy (8.9 percentage points lower for boys). Age and health associations are also large. Although long-term income matters, the magnitude of association is much smaller. A one standard deviation increase in (log of) family equivalent income is associated with a 2.9 percentage point higher probability that a girl says she 'strongly agrees' to

being generally happy (relative to a base of 39.9 percent). By comparison, a one standard deviation increase in pmk depression score is associated with a 4.3 percentage point reduction in the probability of 'strongly agreeing.' To sum up, family income is an important correlate of young teen happiness, but quantitatively, it is not as important as other as family structure, personal health, age (adolescence?), or parental well-being.

Parental Labour Market Experiences and Young Teen Happiness in Two-Parent Families

As noted above, in a sample that includes both lone-parents (mothers or fathers) and two-parent families, we cannot distinguish mother and father paid work hours per week or mother and father weeks of unemployment in the last year. Yet, to the extent that mothers are traditionally more likely to be the principal 'caregivers' within families, long hours of paid work per week by the mother may have larger negative associations with child well-being than long hours of paid work by the father. Of course, implications of high mother paid hours are likely to be different if the father also works long hours (or vice versa). And, to the extent that fathers are still regarded as principal bread-winners (or earn higher salaries), it seems plausible that father's unemployment would generate more stress in the family that mother's unemployment. To investigate these ideas and thus to provide a richer investigation of associations between parental labour market experiences and child well-being, in this small section we restrict attention to children living in two-parent families so that we can include both mother and father weekly paid hours[17] and both mother and father annual weeks of unemployment.

Results of ordered probit models for the young teens in two-parent families are reported in Table 6. A first point to take from this table is that estimated associations between happiness

[17] Since very few fathers do zero hours or even work part-time, in these regressions we use continuous measures of weekly paid hours to avoid violations of confidentiality.

and long-run average income are robust to the change of sample and more complete modelling of parental labour market participation. In terms of the labour market variables themselves, we find, for girls only, a positive and significant relationship between mother weekly paid hours and a negative and significant relationship with father weeks of unemployment during the past year. As predicted by traditional gender roles, *mother's* weekly hours and *father's* weeks of unemployment are what matter. While the fact that it is mother's hours rather than father's hours that is associated with daughter well-being is consistent with traditional gender roles within the family. However, the direction of the association is, to us, surprising, since higher mother hours are associated with higher daughter happiness. While mean weeks of father unemployment are low for teen-age girls (1.4), having a father whose is unemployed has a large negative association with daughter happiness. Other things equal, a daughter whose father was unemployed for 52 weeks last year has a 20 percentage point lower probability of being in the highest happiness category (relative to a 35.7 percent probability for a base case girl with all categorical variables equal to zero and other continuous variables set to sample means).

It is possible that the negative associations of father unemployment would be lower if one's friends' fathers were also unemployed and so such an eventuality would be less scary and unknown; on the other hand, high local unemployment rates could be stressful for teens who might worry about having a parent lose his/her job. We tried including province/year unemployment rates; these were never statistically significant nor did they have much impact on other estimated coefficients.[18]

[18] We also tried further restricting our sample to children living in two-parent families in Census Metropolitan Area's to get a better measure of 'local unemployment rate.' Again, no associations were apparent.

Young Teen Happiness and Neighbourhood Income

In the literature on income and adult happiness, a great deal of attention has focused on relative income associations. Of course, choice of the appropriate reference group is critical to analyses of relative income and happiness. Options that appear in the adult literature include: national average income, regional average income, average income for others with the same level of education (D'Ambrosio and Frick, 2007); individuals with the same age group, in the same region and with similar education (Ferrer-i-Carbonell). Luttmer (2005) also uses a geographic neighbourhood income reference group constructed from U.S. census data.

Choosing a reference income for estimation of relative income effects in the case of teens seems even more difficult than it is for adults. Of the available options, some form of geographic neighbourhood seems most promising for young teens, rather than, say, average incomes for parents of the same age or education level (since young teens may not be entirely aware of whether their parents earn more or less than other adults with similar credentials/experience, but should be somewhat aware of living standards of people they see around them). In our own past work (Burton and Phipps, 2008), we used census data to provide median income in the "neighbourhood" where neighbourhood was defined by the first three digits of postal code. However, the census data will include seniors or students or couples with no children, with whom teens may have very little contact (and about whom they may have very little interest). 'School' seems a more relevant reference income category for young teens who may care much more about whether friends have nicer clothes or electronic devices. Unfortunately, there are insufficient observations per school in the NLSCY to make this feasible.

Motivated by Barrington-Leigh and Helliwell (2008), who find the strongest relative income effects for adults using reference income at the city level, what we use in this paper is

mean real equivalent family income calculated using the NLSCY for any child in any cycle living in the same city (census metropolitan area) as the young teen now resides. For children living outside a CMA, we calculate mean income for any child in any cycle living outside a CMA in the province where the young teen currently resides.[19] Thus, the comparator group includes only other families with children living nearby and we can equivalize comparator income to provide a better measure of actual comparator living standard.

Income coefficients for ordered probit models of young teen well-being that include neighbourhood income are reported in Table 7. Two specifications are reported. First, we use simply the (log of) mean equivalent income for the CMA in which the teen currently resides (with and without covariates other than (log of) family equivalent income). We then include two comparator income variables: a) the absolute value of the difference between own and neighbourhood income, where positive; and b) the absolute value of the difference between own and neighbourhood income, where negative.

The basic message of Table 7 is that while large relative income associations are apparent for boys in the absence of any control variables, these are no longer statistically significant in models that include covariates. For girls, we find no evidence of relative income associations with self-assessed happiness in any of the estimated models. Lack of estimated relative income effects is a finding which is very different from the adult literature, where these effects are always strong and large (see Appendix Table 1).

[19] When CMA average income is included, we cluster at the CMA level (see Moulton, 1990). We also estimated all models using census data merged with the NLSCY at the forward sortation level (i.e., according to the first three digits of the postal code). Like Barrington-Leigh and Helliwell, we find stronger associations using city-level neighbourhood. In our case, this may be because we have data for only two census years (2001 and 2006), yet we are pooling child happiness data from 1996 to 2006.

VI. FIXED EFFECTS ESTIMATION

As noted earlier, a methodological advantage of our analysis is that the young teen reports on his or her happiness while the pmk provides the information used to construct all explanatory variables. This eliminates the problem of potential spurious correlation between the dependent and independent variables deriving, for example, from respondent personality (unless the child inherits his/her parent's disposition). However, a remaining potential problem of endogeneity is that some unobservable factor is connected both to the child's happiness and to the family's income (e.g., parental personality). Although concerns about endogeneity of this type would presumably be more serious if we were studying associations between income and parent's happiness, we nonetheless estimate fixed effects models of young teen happiness to avoid this problem.[20]

Several recent papers studying the link between income and the happiness of adults employ fixed-effects estimation (e.g., di Tella et al., 2007; D'Ambrosio and Frick, 2004 or 2007; Ferrer-i-Carbonell, 2005; Luttmer, 2005). Unfortunately, it is more difficult to estimate standard fixed effects models for our sample of young teens since the questions asked of (and about) the child change as he/she grows and develops. As well, there are changes over time in who is asked particular questions. For example, parents provide assessments of child health until the age of 15; from age 16 on, only the child is asked.

Given these limitations, the best we can do is to estimate fixed effects models for children that we observe at both age 12/13 and then again at age 14/15. Within this age range, we have self reports of happiness provided by the teen and pmk reports for all explanatory variables used in our analysis.

[20] It remains true that a recent unobserved change could coincide with a change in both family income and a change in child happiness.

With just two cycles of data for each child included in the estimation, we are more limited in the specifications for income we can test in the fixed effects models. For example, long-run average income or past income variability cannot be used. Thus, we include only the (log of) current family equivalent income and so effectively test whether there is an association between observed changes in family income and changes in teen happiness. We run the fixed effects models including only (log of) current family equivalent income, then with time-varying covariates: child health, family structure, parental paid hours and unemployment, number of siblings and child health. In version 'A,' we include the dummy indicator that the pmk was 'mostly or always' happy last week; in version 'B,' we include the pmk depression score. All models are run for the combined boy/girl sample as well as for boys and girls separately.

Results from the fixed effects estimation are reported in Table 8. In the pooled boy/girl sample, we find a small positive and significant association between changes in (log of) current equivalent family income and changes in young teen happiness in models that include covariates. Although coefficient size is actually larger in the models estimated for boys, income is not statistically significant in either of the specifications reported here. (If, however, we do not include a measure of pmk happiness or depression, income remains statistically significant for the boys.)[21] Changes in current family income clearly do not have a statistically significant association with changes in happiness levels for girls. This is consistent with findings from the earlier section that past variation in income are not associated with current levels of happiness for girls.

[21] For boys, income is also statistically significant in a conditional logit model of the probability of being 'unhappy.' This finding is also consistent with our earlier work that found, in cross sectional analysis, the strongest associations between income and the probability of being at the bottom of the child happiness distribution (see Burton and Phipps, 2008).

Studies of adult happiness that employ fixed effects methodologies do typically find significant relationships between changes in income and changes in adult self-reports of happiness (e.g., Clark et al., 2008; D'Ambrosio and Frick, 2004 and 2007; Ferrer-i-Carbonell and Frijters, 2004). Why are our results different? One possibility is that income matters less for children (as discussed earlier). It could also be the case that we could pick up more with a 10-point scale and more years of data.

In the fixed effects models, we do not find any associations between changes in pmk happiness (or depression) and changes in young teen happiness (though, for the girls, significance levels are just below conventional levels – e.g., p-value for pmk depression = 0.108).

For both boys and girls, perhaps the most evident pattern in the fixed effects estimates is a strong association between pmk entering or leaving paid work with young teens happiness falling when pmk's enter full-time employment. Since there was no association between the level of pmk paid hours and the level of young teen happiness, these fixed effects findings could plausibly indicate a process of adaptation. That is, young teens whose parents usually do full-time paid work may be used to this; but, they may feel happier if their mother reduces paid hours and so is at home when they arrive after school. Or, on the other hand, young teens who are used to their mothers being at home may feel less happy if their mother enters paid work, though they may eventually adjust to the new situation.

For girls, strong associations between moving into a lone-parent family and falling happiness is apparent; developing a chronic condition is also associated with falling happiness.

VII. CONCLUSIONS

The link between income and adult happiness has received considerable recent attention; the novelty of this paper is to ask whether 'money buys happiness' for young teens. We study the happiness of Canadian 12 to 15 year olds using the Statistics Canada National Longitudinal Survey of Children and Youth. Young teens assess their own happiness; parents (usually mothers) provide the information used to construct other explanatory variables. Our results indicate a positive association between the level of family income and young teen self-reported happiness, particularly when we use a long-term average measure of income; given the level of family income, past gains or losses in family income are less important as are neighbourhood income levels.

From the perspective of a young teen, having a higher family income increases material resources, but potentially at the expense of hours of parental time available. Also, parental unemployment is plausibly upsetting for young teens as well as parents. We thus also consider associations between teen happiness about parental labour market variables. For children in two-parent families, we find that father's (but not mother's) unemployment is associated with lower happiness for girls. In fixed effects estimates, one of the strongest correlates of changes in teen well-being (for both boys and girls) is changes in mother's weekly paid work hours. Finally, a novel feature of the NLSCY that we explore here is that both the mother and child provide self-assessments of their own well-being. We can thus test the idea that a pathway from family income to child happiness is through parental subjective well-being. However, while we do find a positive correlation between mother and daughter well-being, this has little impact of the estimated size of the income coefficient.

As is also true for adults, while family income is an important correlate of the level of young teen happiness, quantitatively, it is not nearly as important as family structure, teen's age and health status, or parental well-being.

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Table 1: Self-Reported Happiness of Canadian 12 to 15 Year Olds

"In general, I am happy with how things are for me in my life now."	Full Sample (%)	Boys (%)	Girls (%)
Strongly Disagree	1.6	1.6	1.6
Disagree	7.0	6.4	7.5
Agree	56.6	56.0	57.3
Strongly Agree	34.8	36.1	33.5
Number of Observations	9124	4535	4589

Table 2: Means/Frequencies of Explanatory Variables

	Full Sample	Boys	Girls
Current Family Equivalent Income[1]	44363	44865	43863
Long-run Average Family Equivalent Income	41016	41354	40679
Current Family Income (Non-equivalized)	98390	99421	97360
Long-run Average Family Income (Non-equivalized)	86059	86808	85312
Coefficient of Variation of Family Equivalent Income	0. 1060	0.1057	0.1062
Ever had real income reduction greater than 25%	33.4	32.7	34.0
Current Family Type (%)			
Two Biological Parents	84.1	83.8	84.4
Lone Parent	7.6	7.1	8.0
Step Family	8.4	9.0	7.6
Current Pmk Weekly Paid Hours (%)			
0	12.9	13.4	12.4
1 to 29	22.6	23.4	21.8
30 to 39	29.4	28.7	30.1
40+	35.0	34.5	35.6
Either parent experienced any unemployment, current year (%)	10.2	9.8	10.8
Additional Pmk Reported Variables			
Current Child Age (%)			
12	24.5	24.1	24.6
13	24.9	25.6	24.3
14	25.3	24.1	26.6
15	25.3	26.2	24.5
Child Female (%)	50.0	0	1
Current Number of siblings	1.47	1.45	1.49
Child Chronic Condition (%)	29.6	31.2	28.0
Region			
Atlantic (%)	6.7	7.0	6.3
Quebec (%)	24.9	24.0	25.8
Ontario (%)	39.6	38.9	38.3
West (%)	29.8	30.0	29.6
Rural (%)	13.6	14.3	12.8
Pmk has High School Education or Less (%)	51.5	51.0	52.0
Pmk Mostly or Always Happy in last week (%)	84.2	84.2	84.2
Pmk Depression Score (range of 0 to 36)	3.5	3.5	3.5
Number of Observations	9124	4535	4589

[1]"Equivalent income" is family income from all sources, before tax, divided by the LIS equivalence scale (square root of family size). All incomes are expressed in 2006 Canadian dollars.

Table 3. Ordered Probit Estimates. Income Coefficients for Alternative Measures of Family Income & the Self-Assessed Happiness of Canadian 12 to 15 Year Olds[1]

	All		Boys		Girls	
	Income Measure Only	Income + Covariates	Income Measure Only	Income + Covariates	Income Measure Only	Income + Covariates
Log Current Family Equivalent Income	0.176*** (0.037)	0.136*** (0.045)	0.158*** (0.052)	0.158** (0.061)	0.192*** (0.050)	0.106* (0.060)
Log Long-Run Average Equivalent Income	0.205*** (0.041)	0.175*** (0.047)	0.149** (0.061)	0.144** (0.069)	0.260*** (0.056)	0.200*** (0.066)
Log Long-Run Average Equivalent Income	0.200*** (0.042)	0.177*** (0.047)	0.145** (0.061)	0.150** (0.070)	0.256*** (0.057)	0.200*** (0.066)
+ Coefficient of Variation	-0.554** (0.276)	-0.336 (0.284)	-0.719* (0.369)	-0.569 (0.385)	-0.373 (0.387)	-0.099 (0.389)
Log Long-Run Average Equivalent Income	0.194*** (0.041)	0.172*** (0.046)	0.134** (0.061)	0.139** (0.069)	0.252*** (0.056)	0.201*** (0.066)
+ 25 percent reduction in family income	-0.100** (0.042)	-0.065 (0.045)	-0.130** (0.061)	-0.116* (0.065)	-0.067 (0.057)	-0.016 (0.059)
Number of Observations	9124		4535		4589	

* 10% significance level; ** 5% significance level; *** 1% significance level

[1]The dependent variable is a dummy = 1 if the child "strongly disagreed" or "disagreed", = 2 if the child "agreed", = 3 if the child "strongly agreed" with the statement "In general, I am happy with how things are for me in my life now."

Covariates: child gender, child age, child health, family structure, parental unemployment, pmk education and paid work hours, region, cycle dummies.

Table 4a. Ordered Probit Estimates of the Correlates of Self-Assessed Happiness of Canadian 12 to 15 Year Olds. With and Without Measures of Parental Well-Being.

	Boys+Girls		
Long-run Average Family Equivalent Income	0.175*** (0.047)	0.158*** (0.046)	0.148*** (0.047)
Pmk Mostly or Always Happy last week		0.151*** (0.057)	
Pmk depression score			-0.016*** (0.004)
Current Family Type (Base = 2 biological)			
Lone Parent	-0.345*** (0.079)	-0.323*** (0.078)	-0.305*** (0.078)
Step Family	-0.232*** (0.081)	-0.235*** (0.081)	-0.223*** (0.081)
Current Pmk Weekly Paid Hours			
0	-0.063 0.067)	-0.063 0.067)	-0.046 (0.067)
1 to 29	0.034 (0.052)	0.032 (0.052)	0.035 (0.052)
40+	0.014 (0.049)	0.013 (0.049)	0.015 (0.049)
Either parent unemployed, current year	-0.033 (0.055)	-0.033 (0.056)	-0.032 (0.055)
Additional Pmk Reported Variables			
Child Girl	-0.071* (0.041)	-0.072* (0.040)	-0.071* (0.040)
Current Child Age (Base = 12)			
13	-0.057 (0.050)	-0.057 (0.050)	-0.055 (0.050)
14	-0.162*** (0.044)	-0.162*** (0.044)	-0.161*** (0.044)
15	-0.205*** (0.051)	-0.205*** (0.051)	-0.202*** (0.051)
Current Number of siblings	-0.006 (0.019)	-0.008 (0.019)	-0.010 (0.019)
Child Chronic Condition	-0.146*** (0.044)	-0.143*** (0.044)	-0.134*** (0.044)
Rural	0.125*** (0.046)	0.125*** (0.046)	0.117** (0.046)
Pmk has High School Education or Less	-0.026 (0.040)	-0.026 (0.040)	-0.020 (0.040)
Number of Observations	9124		

*10% significance level; **5% significance level; ***1% significance level
Region dummies, cycle dummies and ordered probit cut points not reported.

Table 4b. Correlates of the Self-Assessed Happiness of Canadian 12 to 15 Year Olds. With and Without Measures of Parental Well-Being. By Gender.

	Boys			Girls		
Long-run Average Family Equivalent Income	0.144** (0.069)	0.140** (0.069)	0.131* (0.070)	0.200*** 0.066)	0.167*** 0.064)	0.157** (0.064)
Pmk Mostly or Always Happy last week		0.036 (0.084)			0.267*** (0.082)	
Pmk depression score			-0.008 (0.006)			-0.024*** (0.006)
Current Family Type (Base = 2 biological)						
Lone Parent	-0.259** (0.119)	-0.255* (0.114)	-0.241** (0.113)	-0.409*** (0.113)	-0.368*** (0.111)	-0.346*** (0.113)
Step Family	-0.203** (0.117)	-0.203* (0.120)	-0.195 (0.121)	-0.286*** (0.096)	-0.287*** (0.096)	-0.284*** (0.093)
Current Pmk Weekly Paid Hours						
0	-0.037 (0.091)	-0.038 (0.090)	-0.029 (0.091)	-0.114 (0.093)	-0.106 (0.095)	-0.084 (0.096)
1 to 29	0.021 (0.074)	0.019 (0.074)	0.021 (0.074)	0.043 (0.074)	0.052 (0.074)	0.049 (0.074)
More than 40	-0.047 (0.067)	-0.048 (0.067)	-0.043 (0.067)	0.073 (0.069)	0.081 (0.070)	0.078 (0.070)
Either parent unemployed, current year	-0.032 (0.079)	-0.032 (0.079)	-0.032 (0.079)	-0.037 (0.080)	-0.037 (0.082)	-0.033 (0.081)
Additional Pmk Reported Variables						
Current Child Age (Base = 12)						
13	-0.033 (0.074)	-0.032 (0.074)	-0.032 (0.074)	-0.092 (0.067)	-0.091 (0.067)	-0.085 (0.067)
14	-0.125* (0.065)	-0.124* (0.065)	-0.124* (0.065)	-0.200*** (0.061)	-0.207*** (0.063)	-0.200*** (0.062)
15	-0.162** (0.075)	-0.162** (0.075)	-0.159** (0.075)	-0.255*** (0.072)	-0.260*** (0.073)	-0.254*** (0.072)
Current Number of siblings	-0.018 (0.029)	-0.019 (0.029)	-0.019 (0.029)	0.007 (0.028)	0.002 (0.028)	-0.002 (0.028)
Child Chronic Condition	-0.069 (0.064)	-0.069 (0.064)	-0.065 (0.065)	-0.226*** (0.056)	-0.216*** (0.056)	-0.204*** (0.057)
Rural	0.078 (0.064)	0.076 (0.064)	0.072 (0.064)	0.179** (0.072)	0.179** (0.072)	0.173** (0.071)
Pmk has High School Education or Less	0.035 (0.056)	0.035 (0.056)	0.038 (0.057)	-0.087 (0.057)	-0.087 (0.057)	-0.076 (0.057)
Number of Observations	4535			4589		

*10% significance level; **5% significance level; ***1% significance level
Region dummies, cycle dummies and ordered probit cut points not reported.

Table 5a. Predicted Magnitudes of Association with Probability of Being "Generally Happy," where statistically significant, for combined sample of boys and girls.

	Boys+Girls			
	Strongly Disagree	Disagree	Agree	Strongly Agree
Baseline Probablity	0.9	4.9	53.1	41.2
(Log) Long-run Average Family Equivalent Income (+ 1 std dev)	-0.2	-0.6	-1.9	+2.7
Pmk depression score (+ 1 std dev)	+0.2	+0.7	+2.0	-2.8
Current Family Type (Base = 2 biological)				
Lone Parent	+1.0	+3.4	+6.9	-11.3
Step Family	+0.7	+2.3	+5.3	-8.4
Child Girl	+0.2	+0.7	+1.9	-2.8
Current Child Age (Base = 12)				
13	+0.1	+0.5	+1.4	-2.1
14	+0.5	+1.6	+4.0	-6.1
15	+0.5	+2.0	+5.2	-7.7
Child Chronic Condition	+0.4	+1.3	+3.4	-5.1
Rural	-0.2	-1.0	-3.4	+4.6

Calculations illustrate change in probability relative to probability calculated at sample mean, with all categorical variables set equal to zero. Categorical variables are changed from zero to one; continuous variables are increased by one standard deviation. Regression coefficients for the boy+girl sample, including pmk depression score are used (Table 4a, third column).

Table 5b. Predicted Magnitudes of Association with Probability of Being "Generally Happy," where statistically significant for either, separate boy and girl samples.

	Boys				Girls			
	Strongly Disagree	Disagree	Agree	Strongly Agree	Strongly Disagree	Disagree	Agree	Strongly Agree
Baseline Probability	1.1	5.2	54.0	39.6	0.8	5.0	54.3	39.9
Long-run Average Family Equivalent Income (+ 1 std dev)	-0.2	-0.6	-1.6	+2.4	-0.2	-0.7	-2.0	+2.9
Pmk depression score (+ 1 std dev)	+0.1	+0.3	+0.9	-1.4	+0.2	+1.1	+3.4	-4.3
Current Family Type (Base = 2 biological)								
Lone Parent	+0.9	+2.6	+5.3	-8.9	+1.1	+4.1	+7.3	-12.5
Step Family	+0.7	+2.1	+4.5	-7.3	+0.9	+3.2	+6.4	-10.4
Current Child Age (Base = 12)								
13	+0.1	+0.3	+0.8	-1.2	+0.2	+0.8	+2.2	-3.2
14	+0.4	+1.3	+3.0	-4.7	+0.5	+2.2	+4.8	-7.5
15	+0.5	+1.6	+3.9	-6.1	+0.6	+2.6	+6.3	-9.6
Child Chronic Condition	+0.2	+0.6	+1.6	-2.4	+0.6	+2.2	+4.9	-7.6
Rural	-0.2	-0.7	-2.0	+2.8	-0.3	-1.4	-5.0	+6.8

Calculations illustrate change in probability relative to probability calculated at sample mean, with all categorical variables set equal to zero. Categorical variables are changed from zero to one; continuous variables are increased by one standard deviation. Regression coefficients for the boys are taken from Table 4b, column 3; regression coefficients for the girls are taken from Table 4b, column 6.

Table 6. Ordered Probit Estimates of the Relationships Between Parental Labour Market Outcomes and the Self-Assessed Happiness of Canadian 12 to 15 Year Olds in Two-Parent Families.

	Boys + Girls		Boys		Girls	
(Log) Long-run Average Family Income	0.157*** (0.049)	0.157*** (0.049)	0.150** (0.071)	0.152** (0.071)	0.163** (0.064)	0.162** (0.064)
Step Family	-0.222*** (0.080)	-0.222*** (0.080)	-0.196 (0.121)	-0.193 (0.122)	-0.266*** (0.093)	-0.270*** (0.093)
Pmk Happy	0.113* (0.062)	0.113* (0.062)	-0.009 (0.087)	-0.008 (0.087)	0.229*** (0.088)	0.226** (0.088)
Mother Weekly Paid Hours	0.001 (0.001)	0.001 (0.001)	-0.001 (0.002)	-0.001 (0.002)	0.004** (0.002)	0.004** (0.002)
Father Weekly Paid Hours	-0.0005 (0.002)	-0.0005 (0.002)	0.002 (0.003)	0.002 (0.003)	-0.003 (0.003)	-0.003 (0.003)
Mother Weeks Unemployed past year	-0.0009 (0.003	-0.0009 (0.003	0.0000 (0.005)	-0.0003 (0.005)	-0.002 (0.005)	-0.001 (0.005)
Father Weeks Unemployed past year	-0.005 (0.003)	-0.005 (0.002)	0.001 (0.004)	0.0006 (0.004)	-0.012*** (0.004)	-0.012*** (0.004)
Provincial Unemployment Rate		0.0006 (0.013)		0.027 (0.020)		-0.031 (0.020)
Number of Observations	8450	8450	4216	4216	4234	4234

*10% significance level; **5% significance level; ***1% significance level
Estimated coefficients for other controls and ordered probit cut points not reported.

Table 7. Ordered Probit Estimates of the Association Between CMA Income and the Self-Assessed Happiness of Canadian 12 to 15 Year Olds[1]

	Boys		Girls	
	Income Measures Only	Income + Covariates	Income Measures Only	Income + Covariates
Specification 1				
(Log of) Current Equivalent Family Income	0.189*** (0.055)	0.170*** (0.062)	0.200*** (0.052)	0.096 (0.063)
(Log of) Equivalent Income for Families with Children in Current CMA	-0.432** (0.168)	-0.354 (0.236)	-0.104 (0.162)	0.202 (0.209)
Specification 2				
(Log of) Current Equivalent Family Income	-0.235 (0.159)	-0.173 (0.231)	0.086 (0.155)	0.276 (0.199)
Difference, where higher	0.324* (0.184)	0.260 (0.240)	0.245 (0.191)	-0.0003 (0.227)
Difference, where lower	-0.494*** (0.186)	-0.408 (0.114)	-0.032 (0.175)	0.306 (0.222)
Number of Observations	4535		4589	

* 10% significance level; ** 5% significance level; *** 1% significance level

Co-variates: child age, child health, family structure, parental unemployment, pmk education and paid work hours, region, cycle dummies.

The difference variables are constructed as the absolute value of (log of) current family equivalent income less (log of) mean equivalent income for families with children in the child's current CMA (or, the mean equivalent income for all families with children living outside CMA's in that province, if the child is not a CMA resident).

Table 8. Fixed Effects Estimates of Young Teen Happiness.

	Boys+Girls			Boys			Girls		
	No controls	With controls A	With controls B	No controls	With controls A	With controls B	No controls	With controls A	With controls B
Current Equivalent Family Income	0.021 (0.037)	0.071* (0.068)	0.070* (0.038)	0.035 (0.055)	0.082 (0.057)	0.087 (0.058)	0.005 (0.047)	0.040 (0.046)	0.040 (0.045)
Pmk Happy		0.028 (0.040)			0.063 (0.051)			-0.011 (0.055)	
Pmk Depression			-0.004 (0.003)			0.0005 (0.004)			-0.008 (0.005)
Lone parent		-0.125 (0.090)	-0.119 (0.089)		0.017 (0.116)	0.008 (0.118)		-0.298** (0.118)	-0.270** (0.119)
Stepfamily		-0.129 (0.097)	-0.126 (0.098)		-0.146 (0.143)	-0.144 (0.142)		-0.130 (0.121)	-0.115 (0.119)
Either parent Unem-ployed		-0.002 (0.049)	-0.0007 (0.049)		0.002 (0.077)	0.0007 (0.077)		0.002 (0.064)	0.006 (0.065)
Pmk weekly paid hours									
0		0.183*** (0.063)	0.185*** (0.063)		0.189** (0.094)	0.187** (0.093)		0.184** (0.082)	0.182** (0.081)
1 to 29		0.078** (0.035)	0.078** (0.035)		0.078 (0.053)	0.077 (0.053)		0.086* (0.047)	0.080* (0.047)
More than 40		0.021 (0.034)	0.021 (0.034)		0.033 (0.052)	0.033 (0.052)		0.006 (0.043)	0.006 (0.043)
Number of siblings		0.033 (0.034)	0.032 (0.034)		-0.010 (0.052)	-0.010 (0.052)		0.066 (0.045)	0.065 (0.045)
Chronic condition		-0.116*** (0.036)	-0.114 (0.036)		-0.074 (0.047)	-0.076 (0.047)		-0.158*** (0.047)	-0.158*** (0.055)
Number of observations	5788			2877			2911		

* 10% significance level; ** 5% significance level; *** 1% significance level

Cycle and cohort fixed effects not reported.

Appendix 1.

In the NLSCY, each mother is asked how often during the past week she has: 1) not felt like eating; 2) felt she could not shake off the blues even with help from family or friends: 3) had trouble keeping her mind on what she was doing; 4) felt depressed; 5) found everything an effort; 6) felt hopeful about the future; 7) had restless sleep; 8) felt happy; 9) felt lonely; 10) enjoyed life; 11) had crying spells; 12) felt people disliked her. Response categories included "rarely or none of the time (less than 1 day), some or a little of the time (1 to 2 days), occasionally or a moderate amount of time (3 to 4 days), most or all of the time (5 to 7 days). On the basis of answers to the 12 questions, a score was constructed for each mother by assigning a value of 0 to any answers of 'rarely or none of the time,' a value of 1 to answers of 'some of the time,' etc. Thus, a woman reporting no problems with depression would receive a score of zero; the highest possible depression score (i.e., the worst outcome) is 36. The depression scale is a shorter version of the Center for Epidemiology Depression Scale (CES-D) developed by L.S. Radloff at the National Institute of Mental Health in the United States. The NLSCY depression scale was shortened by Dr. M. Boyle of McMaster University.

Appendix Table 1. Selected Results from the Literature on Estimated Family and Relative Income Associations with Adult Life Satisfaction.

Author	Data Set	Survey Question	Estimation Technique	Results
Barrington-Leigh and Helliwell, 2008	3 Canadian cross-sections	Overall life satisfaction, 5 or 10 point scale	Ordered logit	(log of hh income): 0.21 to 0.71 always significant at 1% Size of family income correlation falls but remains significant with addition of various relative measures, geographically defined
Clark, Kristensen, and Westergard-Nielson, 2008	Danish sample of European Community Household Panel + administrative records	Satisfaction with economic conditions (scale of 1 to 6)	Fixed effects (OLS)	(Log) individual earnings: 0.390** Log (median small area neighbourhood hh income): 0.228
Clark and Oswald (1996)	British Household Panel Survey, 1991 Employees, 16+	Satisfaction with job, 7 point scale	Ordered probit	(log) income: 0.11 (log) comparison income: -0.20 (Ref gp from regression prediction of indivs with similar characteristics)
D'Ambrosio, Conchita and Frick, Joachim (2004)	German Socioeconomic Panel, 1994 to 2003, Adult respondents	Satisfaction with Income, 11-point scale AND Satisfaction with Life over-all	Fixed effects (OLS)	Income level alone: +0.721** When rank and relative deprivation added, income coefficient falls to 0.045** Rank coeff: 0.187*; Rel dep coeff: 3.671** (Ref gp: country, state and educ gp)
D'Ambrosio, Conchita and Frick, Joachim (2007)	German Socioeconomic Panel, 1994 to 2004, Adult respondents	Satisfaction with Income, 11-point scale	Fixed effects (OLS)	Income last year: +0.3 to +0.4 ** Relative deprivation: -2.5** (Ref gp: country, state and educ gp)
Ferrer-i-Carbonell and Frijters (2004)	German Socioeconomic Panel, West German Workers	General life satisfaction, 11-point scale	OLS Fixed effects (ordered logit)	0.38 ***(log household income) 0.11***
Luttmer (2005)	U.S. National Survey of Families and Households, 1987-1988 and 1992-1994 waves, aged 19+	Self-reported happiness, 1 to 7 scale	OLS (basic version)	Household income (log): 0.20 Average Geographic Neighbourhood income (log): -0.17